

P38: Tear microRNA concentration in type 2 diabetes Mellitus patients

C. Campos-Borges^{1,2}, V. Zanón-Moreno², C. Galbis-Estrada^{2,3}, C. Marco-Ramírez^{2,3}, J.J. García-Medina³, C. Prudêncio^{1,4}, M.D. Pinazo-Durán^{2,3}

¹Ciências Químicas e das Biomoléculas, Centro de Investigação em Saúde e Ambiente, Escola Superior de Tecnologia da Saúde do Porto, Instituto Politécnico do Porto, Portugal

²Unidad de Investigación Oftalmológica, "Santiago Grisolia", Hospital Universitario Dr Peset, Valencia, España

³Facultad de Medicina, Universidad de Valencia, España

⁴IS – Instituto de Investigação e Inovação em Saúde, Universidade do Porto, Portugal

Presenting author: crisbfc@hotmail.com

Introduction: Type 2 diabetes mellitus (T2DM) is a major public health problem. Genetics of T2DM are still unsolved. Altered microRNAs expression has been connected several diseases.

Objectives: The goal of this study was to determine total concentration of microRNAs in tears of diabetic patients and control subjects; different concentration and possible altered expression patterns of microRNAs in tears of T2DM may contribute to the elucidation of the mechanisms of the disease.

Materials and Methods: This study was designed to quantify the total amount of microRNAs in tears of T2DM patients, according to the inclusion/exclusion criteria and divided into 2 groups: 1) T2DMG (n=30) and 2) healthy controls (CG; n=24). Information was collected from clinical history, ophthalmic examination made and a tear volume of 15-20 microliters was collected. microRNA was obtained using a spin column chromatography and quantified by a Nanodrop®, analysed by specific software. Statistics were performed adjusting by age by the SPSS 15.0.

Results and Discussion: Median age of T2DMG was 68±12 vs 43±21 years in the CG. It was found a significantly higher microRNAs concentration in tears from the T2DMG vs the CG (9.02±3.08 vs 6.85±3.58 ng/μL; p=0.022).

Conclusion: Based on this "in vivo" study we verified that diabetics showed a differential microRNA concentration in tears. Identifying the specific microRNAs involved in T2DM and retinopathy, it will allow the design of new therapeutic strategies for better managing the eyes and vision.

Acknowledgments: FIS. PI13/00480 and RETICS-OFTARED Groups RD12/0034/0008- RD12/0034/0001

References

1. Galbis-Estrada, C. (2013). Cytokine/Chemokine Expression in Reflex Tears from Employers Exposed to Computer in Office Environment. *Internal Medicine*, 3 (2).
2. Mastropasqua, R. (2014). Role of microRNAs in modulation of diabetic retinopathy. *Progress in Retinal and Eye Research*, 43, 92-107.
3. O'Rahilly, S. (2005). Genetic Factors in type 2 diabetes: the end of the beginning? *Science*, 307(5708), 370-373.